DETAILED ACTION

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors, e.g., typographical, grammar, idiomatic, syntax and etc. Applicants' cooperations are requested in correcting any errors of which applicants may become aware in the specification.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "2" and "5" have both been used to designate enrichment section. See page 6, line 29 and page 6, line 34 respectively.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a). There are insufficient proper antecedent basis for the following limitations in the claims.

1). “the methoxypropanols as azeotrope with water”, claims 11 & 30;

2). “the solvent mixture”, claims 11 &30;

3). “the sideofftake of the second column” and “the sideofftake of the third column” both in claim 17; and

4). “the feed column”, claim 19.

b). The claims or at least part of the claims are recited in passive rather than active steps,e.g., the recitation of "by distillation" and "by reaction of a hydroperoxide with propylene" in claim 11, line 1 and lines 2-3 respectively. See also claim 30.

c). It is unclear what “the organic compound” is being referred to in claim 22.

d). The thermally coupled columns recited in claims 16 and 29 are at odd or at least broadening the "dividing wall column" initially recited in claim 11, the claim from which they depend

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29

USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 11-30 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 11-30 of copending Application No. 10/521784. Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter of the instant claim is covered in the claims of the above application and vice versa.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 11-30 are provisionally rejected on the ground of nonstatutory double patenting over claims 11-30 of copending Application No. 10/521,784. This is a provisional double patenting rejection since the conflicting claims have not yet been patented. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: “a continuously operated process for the purification by distillation of the methanol used as solvent in the synthesis of propylene oxide by reaction of a hydroperoxide with propylene, with the

methoxypropanols as azeotrope with water and the low boilers and high boilers simultaneously being separated off, wherein the solvent mixture obtained in the synthesis is fractionated in a dividing wall column".

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' Disclosure of Admitted Prior art as illustrated e.g., by WO00/07965 in view of Rust (6,958,111) or Lestak et al HEAT TRANSFER ACROSS THE WALL OF DIVIDING WALL COLUMNS" publication(July 1994) .

Applicants admit at page 1, lines 25-37 thru page 2, lines 1-30 that "the multistage process described in WO 00/07965 provides for the reaction of the organic compound with a hydroperoxide to comprise at least the steps (i) to (iii): (i)reaction of the hydroperoxide with the organic compound to give a product mixture comprising the reacted organic compound and unreacted hydroperoxide,

(ii) separation of the unreacted hydroperoxide from the mixture resulting from step (i),

(iii) reaction of the hydroperoxide which has been separated off in step (ii) with the organic compound. Accordingly, the reaction of the organic compound with the hydroperoxide takes place in at least two steps (i) and (iii), with the hydroperoxide separated off in step (ii) being reused in the reaction.

Applicants further admit at page 2, lines 1-30 The reactions in steps (i) and (iii) are carried out in two separate reactors which are :" preferably configured as fixed-bed reactors. It is advantageous to carry out step (i) under substantially isothermal reaction conditions and step (iii) under adiabatic reaction -conditions. It is likewise advantageous for the reaction to be heterogeneously catalyzed. This reaction sequence is preferably carried- out in a solvent and the hydroperoxide used is preferably hydrogen peroxide. The particularly preferred solvent is methanol…..The propylene oxide has to be separated off from a mixture comprising methanol as solvent,water, hydrogen peroxide as hydroperoxide and also by-products. By-products are, for example, the methoxypropanols, viz. 1-methoxy-2-propanol and 2-methoxy-l-propanol, which are formed by reaction of propylene oxide with methanol..... The propylene oxide is obtained from this mixture by fractional distillation. This distillation also gives fractions which comprise methanol and the methoxypropanols as materials of value. These propanol ethers can be used, for example, as solvents in surface coating systems.The separation processes carried out for recovering these materials of value have hitherto typically been carried out in distillation columns having a side offtake or in columns connected in series. [Compare e.g., with claims 1, 26 and 27].

The process admitted to be known by applicants differs from the claimed invention in that claim 11, for example recites “wherein the solvent mixture obtained in the synthesis is fractionated in a dividing wall column”.

However, said difference does not constitute a patentable distinction inasmuch as it is well- documented in the art that for the fractionation of some multicomponent mixtures the used of a dividing wall column is found to be advantageous. To replace the conventional column used in the purification of methanol , admitted to be known by applicants, with a dividing wall column, in order to arrive at the claimed invention, would have been obvious to one of ordinary skill in the art so as to achieve the predictable result of obtaining the advantages that can be derived in terms of energy consumption and capital costs as taught by Rust, noting e.g., col. 1, lines 1-61. See also Lestak et al publication at page suggestion that a dividing wall column can save typically 30% of the

energy costs when compared with conventional distillation column arrangements.

Claim 14 directed to pressure and temperature, and claim 13 directed to the numbers of theoretical plates are deemed to be result-effective -variables which ordinarily are within the skilled of the art.

Claim 15-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 30 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a). Teles et al discloses a process for producing propylene oxide.

b). Gobbel et al discloses the separation of propylene oxide from a mixture containing the same and methanol.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to V. Manoharan whose telephone number is (571) 272-1450.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Virginia Manoharan/
Primary Examiner, Art Unit 1797